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ARTICLE XLIX.

WHY DO WE GIVE ALCOHOLIC STIMULANTS IN
SHOCK?

By D. W. YOUNG, M.D., Aurora, Ill.

Read before the Fox River Valley Medical Association, October 7th, 1867.

MR. PRESIDENT AND GENTLEMEN:

The above is an important question, both to the profession and the public; is important from its moral as well as its physical relations to society. However, I do not propose to constitute myself a reformer and treat of its immoral bearings upon society, I will leave that to those who make more pretensions in that direction; still, in my judgment, it behooves us all, as a profession, who should be conservators of public morals as well as public health, to study well the reasons that induce us, as a profession, to insist and persist in the sanction and recommendation of an article which is constantly producing such terribly degrading influences upon human society. I cannot help thinking that unless upon a thorough examination *we find it imperative*, we are not justifiable in lending our influence and sanction to its so general use as a medicine. The opinion that alcoholic liquors afford to the human system a stimulus, which, if not absolutely necessary and essential to its well-being, is, nevertheless, beneficial, by promoting in the several organs a

vigorous and healthful exercise of their respective functions, and by enabling them, thus, to resist more effectually the various disturbing agencies to which they are daily subjected, is one that has been long entertained, and of the correctness of which a large portion of the public still entertains a firm conviction. Most undoubtedly, to the influence of this opinion may *and must* be ascribed much of the intemperance which has prevailed in the world; and it, even now, presents a formidable barrier to the success of every effort at reform, in respect to the use of intoxicating liquors as a beverage.

We all know that the practice of giving alcoholic stimulants in all cases of shock, whether physical or mental, has become so common, that not only all physicians, but all the public, fly to the whiskey and brandy bottles as the elixir of life—the great restorers of health and animation. So long as this opinion prevails, every effort to stay the progress of intemperance, with its attendant evils, disease, poverty, insanity, and crime, will of necessity be unavailing.

Is this practice in conformity with the best known medical facts—facts of undoubted observation and experience? Is it based upon scientific medical investigation; or is it simply custom, handed down to us from the dark ages of the profession? To try and answer these questions is the object of this paper. To investigate this subject understandingly, it will be necessary to inquire what shock is; what the physical condition that produces it; what the lesion to be remedied; also, what the known or supposed physiological action or effects of alcoholic stimulants are upon the human system.

Prof. DUNGLISON says:—Shock is a “sudden or instantaneous depression of organic, nervous, or vital power, often with more or less perturbation of body and mind, passing either into reaction or into fatal sinking, occasioned by the nature, severity, or extent of injury, or by an overwhelming moral calamity.”

Prof. GROSS, in his system of surgery, says:—“Shock may be defined to be a depression of the vital powers, induced suddenly by external injury, and essentially dependent upon a loss of innervation. It bears, in effect, the same relation to the ner-

vous system, that syncope does to the vascular; in the one case, the result is caused by a diminution of blood; in the other, by a diminution of the nervous fluid; in both, the consequence is, more or less prostration, with perturbation of body and mind, extremely variable both as to intensity and duration. When nervous shock is severe, it may instantaneously terminate in death, as so often happens in falls and blows upon the head; more generally, however, after having continued an indefinite period, it passes into reaction, the powers of life gradually coming up as the different organs and the general system regain their nervous fluid. The most severe and fatal cases of shock are, generally, those that supervene upon direct injury to the great nervous-centres, as the brain and spinal cord. No less disastrous effects occasionally succeed blows upon the epigastric region, in consequence of the violence thus inflicted upon the solar plexus of nerves. The blood has long been known by physiologists, as the vital fluid, so necessary has its integrity always been regarded to the well-being of the system and maintenance of healthy action. But, certainly, it is not the only fluid entitled to this distinction; the nervous fluid is both more subtle and more important as a life preserver. When the blood flows away in a mighty and overwhelming torrent, the person dies, and life is then said to be destroyed, as it certainly is, by the excessive sanguineous drainage. But in shock, the same thing may happen, and yet the body be literally surcharged with blood, not a single drop, perhaps, having been spilled in the accident causing the fatal result. Thus, of the two fluids, the nervous is in every respect the more important, because the more essential to life; and its disturbance is, therefore, a more frequent cause of death.

"There is no sensible practitioner who has not occasion daily to lament, in the exercise of his profession, his want of knowledge of the functions of the nervous system, and I feel sure that cases of disease and accidents are constantly permitted to slip through our hands, simply because of our forgetfulness that there is such a thing as nervous fluid. No one is unmindful that a patient has blood, that a certain quantity of this fluid is

necessary to the maintainance of health and life, and that, like the solids, it is subject to a thousand diseases, often of themselves sufficient to cause death. Unfortunately, we can never acquire any intimate knowledge of an agent so subtle as the nervous fluid; like the electric or galvanic, which it is supposed to resemble, we can know it only by its effects."

COPELAND defines shock to be a sudden sinking of vitality; vital depression; nervous shock; nervous depression; fatal sinking. He makes five divisions or classes:

First. Where the shock may be altogether and simply a vital one, as where it is produced by a violent blow on the epigastrium, occasioning concussion of the solar ganglion.

Second. Where it may be associated with various nervous phenomena, as when a large nerve, or joint, or limb, is lacerated or severely injured, and the patient greatly alarmed.

Third. Where it may be complicated with, or rather characterized by, comatose sinking, as when the contusion, concussion, or blow affects the intimate organization and circulation of the brain.

Fourth. Where it may be so associated with the sinking, consequent upon losses of blood, as not to be distinguished from this cause, especially when the injury is such as occasions both shock and hemorrhage.

Fifth. Where the alarm or shock may be entirely a mental one, or that consisting entirely of the sudden effects of extremely depressing emotions on the action of the heart, or of the sudden and unexpected intelligence of distressing losses or events, whereby the nervous system is more or less shocked, the mental manifestations disturbed, and the functions of the heart and vital organs depressed and otherwise disordered.

He adds:—"It will thus be perceived that the injuries or causes occasioning shock may be divided into *five classes*, and that the effects they produce may present *five modified forms*; but although either of these may result from either class of causes, and although it is necessary to connect our observation of the phenomena, and our treatment of shock, with the particular cause of it, it is still more important, especially as regards

the treatment, to mark the particular form and modification requiring our aid."

ERICHSEN says:—"The constitutional effects of shock consist in a disturbance of the functions of the circulatory, respiratory, and nervous systems, the harmony of the great organs of the body becoming disarranged. On the receipt of a severe injury, the sufferer becomes cold, faint, and trembling; the pulse small and fluttering; there is great mental depression and disquietude; the disturbed state of mind revealing itself in the countenance, and in incoherence of speech and thought; the surface becomes covered by a cold sweat; there is nausea, perhaps vomiting, and relaxation of the sphincters. This condition lasts for a variable period, its duration depending on the severity of the injury, and on the nervous susceptibility of the patient. In extreme cases, the depression of power characterizing shock may be so great as to terminate in death. In the great majority of instances, however, reaction comes on, and the disturbed balance in the system is gradually restored. Is this state the result of fear and nervous susceptibility, or is it occasioned directly by the physical lesion? In many cases, doubtless, the effect is entirely mental. Thus, persons have been frightened to death without any local injury or mischief. That there is a great difference in the mental fortitude of individuals, is notorious; some suffering excessive shock from the mere apprehension of injury, whilst others may be the subjects of the severest injury, and show but slight signs of suffering. If the injury be sudden and unexpected, the shock is usually greater. Where the feelings are roused, as in the heat of action, injuries often pass unnoticed by those who receive them. Hence, it is positively evident, that the state of mind at the time of the receipt of the injury materially influences its immediate effect on the constitution. There can be little doubt, however, that different individuals manifest very different degrees of susceptibility to pain, some having more acute sensation than others."

Thus, it will be seen that all these eminent surgeons and authors agree, and define shock to be a "*sudden or instantaneous diminution or depression of organic, nervous, or vital power.*"

All agree that it varies in different cases and persons, according to the severity and extent of the cause or the injury, and the particular temperament, physical and mental condition of the patient at the time of the receipt of the cause or the injury. All these various conditions and circumstances are admitted to have a modifying or controlling influence upon the malady. Why this is so, we are unable to explain; because we do not know what life is—our present limited knowledge of the science of life does not enable us to give an exhaustive definition. BEALE, HUNTER, HARVEY, ARISTOTLE, ABERNETHY, MULLER, PROUT, CARPENTER, HAMMER, and VIRCHOW have all advanced extensive theories, have all written learnedly and guessed extensively, but the question still is, What is life?

The symptoms of shock are very similar in all persons, and from all causes. One receives a blow upon the head; another upon the epigastrium; another, upon the back; another, falls a distance; another, receives sad news, such as the death of friends, or the loss of property; still another, simply witnesses a frightful accident. All reveal the same or similar symptoms. All fall to the ground; become suddenly cold; are bathed in a cold sweat; with deathly paleness; a sunken or collapsed countenance; irregular gasping and difficult breathing; are unable to move, speak, or think; frequently become convulsed; vomit; and, after a longer or shorter period, reaction or fatal sinking supervene, life either ceases, or healthy action is restored and life continues. This depressed condition of the organic, nervous, or vital powers we denominate shock, and the question now is, Are alcoholic stimulants the *sine qua non* to remedy this condition? Are we compelled to resort to this health, wealth, happiness, intellect, and life destroying agent to remedy the evil, to remove the shock?

Let us now carefully and candidly enquire what our own experience and the teachings and writings of our ablest and best physiologists and practitioners teach us upon this point. Learn from all this evidence, how well alcoholic stimulants are entitled to their present exalted position in the cure of this prostration. See if we *must* continue to sanction and recommend their use.

GRIFFITH says:—"In small quantities, there is mere excitement; in large doses, much excitement, with delirium, confusion of intellect, followed by somnolency, nausea, and vomiting, and even coma and apoplexy."

STILLE, in his *Materia Medica*, says, when speaking of its effects on animals:—"When the crural nerve of a frog is moistened with this liquid, the limb loses its power of motion; the same results, with *depressed* action of the heart, ensues when the whole limb is wet with alcohol. The pulsations of the heart soon cease under its application. Fish immediately lose their activity, in water containing but a small proportion of this liquid; and birds, according to FLOURENS, are deprived of sensation and voluntary motion, by a few drops of brandy. Injected into the veins, alcohol always produces symptoms of prostration, proportioned to the quantity used and the purity of the article.

"As early as 1679, COURTEN, LANZANI, and BAGLIVI, all showed that highly rectified spirits might prove instantly fatal, when employed in this manner, and that after death the blood was *always found coagulated in the heart and lungs.*"

SEGALAS "found that half an ounce, with four or five times its weight of water, injected into the crural or jugular vein of a dog, produced loss of motion, insensibility, abdominal respiration, and a *scarcely perceptible pulse.*"

ORFILA "found that eight or ten drachms, injected into the cellular tissue of a dog, produced, first, vomiting of bilious matters, and death in three hours. On dissection, the only lesion discoverable, was coagulation of the blood in the limb operated upon, *and in the heart.*"

DUNGLISON says:—"It need scarcely be said, that the case must be bad indeed, in which the hopes of the practitioner are placed on the excitement which alcohol is capable of inducing. It may be a *question, indeed*, whether it be not calculated to to exhaust the slight amount of excitability still existing in the system."

WOOD and BACHE, in the *United States Dispensatory*, say: "As an article of daily use, alcoholic liquors produce the most

deplorable consequences. Besides the moral degradation which they cause, their habitual use gives rise to dyspepsia, hypochondriasis, visceral obstructions, dropsy, paralysis, and, not unfrequently, mania."

COPELAND says:—"It should be recollected that the effects of spirits or other intoxicating liquors on the frame, will vary very much with the habits of the individual; with his state of body, especially as respects vascular plethora; and the existing condition of the stomach, chiefly as respects the presence of alimentary matters. In the larger proportion of cases, however, after a longer or shorter period of unusual mental vigor, nervous excitement, and increased action, varying according to the surrounding temperature, the brain becomes oppressed; the powers of voluntary motion, which are early impaired, fail entirely; the mental manifestations are suspended; and in the more severe cases, sensation is lost completely. In most cases and instances, this stage supervenes gradually; but any sudden exposure to cold will often induce it rapidly. The person feels drowsy, and appears to fall into a sound sleep; but it is discovered, when the attempt is made, that he cannot be aroused to consciousness by any effort, or, if it partially succeed, he is hardly sensible of surrounding objects, and immediately lapses into his former state, the limbs remain in whatever position they may be placed. The temperature of the head is generally above natural; but that of the extremities, and often of the surface generally, is *considerably lowered*, or but little altered or affected in the milder cases. The pulse, which was at first quick and excited, becomes feeble, small, and ultimately slow, and entirely wanting at the wrist. The respiration is usually infrequent, the separate acts of inspiration and expiration, particularly the former, occupying a very short time, and is wholly or chiefly abdominal. The breathing is often laborious in the most advanced states, and in those, the respirations are convulsive, the chest expanding by the rapid contractions of the associated muscles of respiration."

WILLIAMS, in his Principles of Medicine, says:—"Nor can we wonder at the pernicious effects, when we consider the weak-

ened state of the function and structure which stimulating drinks induce, especially in the organs which they most directly affect, the stomach, the liver, the kidneys, the blood, the heart, and the brain."

All these eminent authors and teachers ascribe to alcohol, either as a primary or secondary effect, an enfeebled action of the heart and circulation. Besides these, we have the very valuable and interesting experiments and concise report of Prof. N. S. DAVIS, of Chicago, who called both the sphygmograph and thermometer to his aid. As his experiments are both very interesting and very instructive, I shall copy them entire:

"On the 6th day of April, 1867, four hours after dinner, when the functions were supposed to be undisturbed by digestion, and the man in good health, the temperature of his body was carefully noted by a delicately graduated thermometer, inserted under the tongue, with the lips closed around it; the rate of the pulse and its qualities, as indicated by the sphygmograph, were recorded at the same time. Four ounces of bourbon whiskey was then administered, diluted with sweetened water. The same observations, in regard to temperature and condition of pulse, were made and recorded every half hour, until two full hours had passed. Another series of observations, in all respects similar, were made on the 11th of April, except the whiskey, for which four ounces of sherry wine was substituted.

"At the commencement of the experiment, at 10.20 o'clock P.M., the temperature of the mouth was $98\frac{1}{4}^{\circ}$, pulse 83 per minute. Then he took the four ounces of whiskey. At 11 o'clock P.M., half an hour after he had taken the whiskey, the temperature of the mouth was $97\frac{3}{4}^{\circ}$, pulse 85 per minute. At 11.30 o'clock P.M., one hour after he had taken the whiskey, the temperature of his mouth was $97\frac{1}{2}^{\circ}$, pulse 89 per minute. At 12 o'clock P.M., one hour and a-half after the whiskey was taken, the temperature of his mouth was $97\frac{1}{2}^{\circ}$, pulse 89 per minute. At 12.30 A.M., two hours after the whiskey had been administered, the temperature of his mouth was $97\frac{1}{2}^{\circ}$, pulse 85 per minute."

Thus, it will be seen that in this experiment, when four ounces of bourbon whiskey were administered, the pulse increased from 83 to 89 beats per minute during the first hour, but decreased in number of beats per minute, from 89 to 85, during the second hour. The sphygmograph shows, most conclusively, that, notwithstanding, while the number of pulsations were increased from 83 to 89 per minute during the first hour, *the force of the heart and pulsations were weakened.* The heart evidently had less power to propel the blood through the arteries, and a congestion of the venous radicles must ensue. The same thing often takes place during venesection, the number of pulsations are increased per minute, but the power of the heart is reduced.

The second experiment made by Prof. DAVIS, differs but little from the first. It was instituted on the 11th day of April, 1867, and is as follows:—"At 10.15 o'clock P.M., three and a-half hours after dinner, the temperature of the mouth was tested with the thermometer, and found to be 97°, pulse 78 beats per minute. At 10.30 o'clock P.M., four ounces of pure, clear sherry wine were administered. At 11 o'clock P.M., half an hour after the wine was swallowed, the temperature of the mouth was 96½°, pulse 75 per minute. At 11.30 o'clock P.M., one hour after the wine was taken, the temperature of the mouth was 96½°, pulse 71 per minute. At 12.30, o'clock P.M., two hours after the wine had been drank, the temperature of the mouth was 96½°, pulse 72 per minute." Thus, it will be seen that under the influence of four ounces of wine, the pulsations were reduced in number per minute, from 78 to 72—lost six beats in two hours. The sphygmograph again shows distinctly that the quality of the pulse was the same in kind in both experiments. *The force of the heart's action was reduced under the influence of both the wine and the whiskey.*

Dr. DAVIS, in commenting upon the results of his experiments, says—"It will be seen that each pulse expands the artery to a greater extent and more suddenly than before the alcoholic liquid was taken, and that the commencement of the contraction is equally more sudden, while the whole line becomes

more wavy or irregular; thereby much resembling the *pulse lines* (as shown by the sphygmograph) when the arterial coats are weakened by fatty degeneration, or in such diseases as are accompanied by enfeebled capillary circulation, like typhus and typhoid fevers."

Here, I desire to add that this fact was very forcibly and strikingly illustrated by comparing them with some fifteen or twenty plates presented to the Illinois State Medical Society, at Springfield, by Prof. H. A. JOHNSON, of Chicago, who also presented the results of his experiments with the sphygmograph, in a large number of cases and different diseases. Prof. JOHNSON'S plates showing the *pulse lines*, as recorded by the sphygmograph, in a number of cases of typhoid fever and chronic diarrhœa, were apparently identical with those presented by Prof. DAVIS, as recorded by the sphygmograph in his experiments with alcoholic stimulants. This fact was very apparent, and was noticed and commented upon by numerous and various members of the association. Both sets of plates showed, most *unmistakably, enfeebled action of the heart*, notwithstanding the one was recorded while the patient was laboring under the influence of four ounces of bourbon whiskey, and the other after the patient had suffered several weeks under the depressing influence of typhoid fever and chronic diarrhœa.

Dr. LIONEL BEALE, Physician to King's College Hospital, in an article in *Braithwaite*, on Stimulation in Serious Cases of Acute Disease, says:—"I shall not discuss *how* stimulants, in very large quantity, influence disease, but shall, in conclusion, beg permission to direct attention to certain clinical facts which have been observed in many cases placed under the influence of large quantities of alcoholic stimulants (*eig teen ounces of brandy and upwards in twenty four hours*) the pulse was not increased, but diminished in frequency."

Let us next inquire how alcoholic stimulants affect the temperature of the body. So far as I can learn, but few really systematic scientific investigations have been made in this direction, and the proofs relied upon as proving the heat-producing power of alcohol, rest chiefly upon the sensation arising

from its ingestion, and on its chemical constitution, which latter is considered, by those who support LIEBIG's theory of animal heat, to furnish evidence of the effectiveness of alcoholic compounds as sources of heat, when introduced into the living organism.

It has been, somewhat loosely and gratuitously, assumed that the agent in question exercises a powerful influence on the production of animal heat, this assumption being based principally on the sensation of warmth experienced in our own persons, after taking alcoholic liquors. We know, however, that our sensations are extremely fallacious guides in all matters pertaining to temperature, and that, therefore, in this case as in others, but little reliance can be placed on their indications. I am fully aware that the great majority of authorities are in favor of the opinion that alcohol is a powerful promoter of animal heat. Many patient, honest, intelligent, and competent experimenters, however, deny this, and, in my judgment, give reasons and results which are at least entitled to our candid consideration. As one means of arriving at the truth on this point, we must examine more particularly into the influence of the introduction of alcohol into the blood, upon the respiratory process. For our knowledge upon this point, we are largely indebted to the experiments of Dr. PROUT and Dr. VIERORDT. The former, states that alcohol and all liquors containing it, which he had tried, have the remarkable power of diminishing the quantity of carbonic acid gas in the expired air, much more than anything else, which he had made the subject of experiments; this effect being most decided when the liquor was taken upon an empty stomach. Dr. VIERORDT fully confirms Dr. PROUT's observations; having found that in four experiments, the percentage of carbonic acid fell, after from a half to a whole bottle of wine had been taken, from 4.54 to 4.01; and that this effect lasted between one and two hours. He further found, that when he drank wine with his dinner, the usual increase in the percentage of carbonic acid expired after a full meal did not take place. These facts are of great importance.

Thus, then, there are clear indications that, when thus pre-

sent in the blood with other materials which ought to be excreted, alcohol exerts an injurious influence, by retarding their combustion. This it will do in two ways:—first, by taking their place as the more readily combustible material; and, secondly, in virtue of the antiseptic influence which it exerts upon other substances, preventing or retarding chemical changes in them. That such is the case, we have at least strong proof, as appears from the experiments of BOUCHARDAT, who found that, when alcohol is introduced into the system in excess, the blood in the arteries presents the aspect of venous blood, clearly showing that it has been prevented from undergoing the proper oxygenating process.

The experiments of Dr. PROUT afford strong additional support to this conclusion; for he observed that no sooner had the effects of the alcohol passed off, than the amount of carbonic acid exhaled *rises much above* the natural standard, thus giving, it would seem, unequivocal evidence of the previous abnormal retention of carbonaceous matter in the system.

From the foregoing considerations, then, we may conclude that the effects of alcohol as a heat-producing material, at best, could only be advantageously experienced when the blood does not contain a supply of other matters waiting for removal by the respiratory process. Is it not the case that in all cases of shock, the respiratory process is but imperfectly performed, and that, as a necessary consequence, there must be an excess of carbonic acid retained in the blood? If such is the fact, can it be a logical procedure to administer such articles as will still further increase the already sedative influence of an excess of venous blood?

Dr. JOHN DAVY found that wine, so from increasing the temperature of his body, caused, on the contrary, a very visible diminution of its heat; and, moreover, that the diminution was proportioned to the quantity of wine taken—the greater the quantity, the more marked being the decrease of temperature.

Dr. J. D. HOOKER, who accompanied Sir JAMES ROSS in his Antarctic expedition, also denies the heat-producing properties of alcohol, and says, "that, even if it is capable of warming

the central portions of the body, it is incapable of raising the temperature of the extremities." And Dr. CARPENTER considers that, although alcoholic liquors may possibly produce a slight and transitory increase of heat, yet this is but momentary and followed by a depression that more than counterbalances the previous elevation.

Dr. EDWARD SMITH, of London, says:—"In a prolonged inquiry upon myself and another, we took the alcohol in moderate quantity, duly diluted, on an empty stomach, and we noticed most carefully the general effects and the moment of their occurrence. At first, there was a sense of dryness and heat, with fulness or swelling of the exposed parts. After about twenty to forty minutes, this sensation gave place to one of cold, which was first felt on the most sensitive part of the body, with regard to temperature, viz., between the shoulders, and, at length, notwithstanding the existence of a suitable degree of atmospheric temperature, it became distressing, and led even to shivering. This was sometimes so marked, and occurred so suddenly, that it gave rise to a shock."

Dr. SIDNEY RINGER, Professor of Materia Medica, at University College, and Dr. WALTER RICKARDS, in an article in the *London Lancet*, give the results of numerous experiments instituted by them, in which they say:—"In their first experiment, they gave alcohol in large doses to three adults. In two, the temperature was greatly depressed—the depression amounting to 3° Fahrenheit. In the third case, the temperature was but little influenced. The subject of this observation was a confirmed drunkard. Alcohol was also, by them, injected into the recti of two rabbits; in both, the temperature was considerably depressed—the depression amounted to 15° Fahrenheit. In a second experiment, they gave alcohol to eleven persons, in ordinary doses (an ounce of brandy). In eight, the temperature was depressed; in three cases, the temperature was unaffected. Two of these were confessed free drinkers. In conducting these observations, the following precautions were taken:—the persons were kept in bed; all the conditions were kept the same; the thermometer was kept the whole time

in the axilla, and the temperature noted every few minutes."

In 1848, MM. DUMEREIL and DUMARQUAY, in making numerous experiments on intoxicated dogs, always found their temperature uniformly reduced.

Two years later, 1850, Prof. N. S. DAVIS, of Chicago, instituted a series of experiments, the results of which showed unmistakably that the presence of only a few ounces of either fermented or distilled drinks, in the human system, was sufficient to produce a positive diminution of temperature. To still further verify these facts, Prof. DAVIS again, on the 6th and 11th days of April, 1867, instituted another series of experiments, which also produced the same results. He found that a strong healthy man, who took four ounces of bourbon whiskey diluted with sweetened water, suffered a depression in temperature. The thermometer fell two degrees in an hour. In the second experiment, where he substituted four ounces of sherry wine for the bourbon whiskey, he found the temperature depressed also, but in a less degree. The depression amounted to one-half degree in one hour.

I might continue, and present other authorities, introduce still more proof, but both time and space forbid; and it does seem to me that I have already presented enough to at least cause us to stop and consider the whys and wherefores before we, by example or sanction, fill every human stomach, whose unfortunate possessor is suffering from shock, with alcohol. I simply desire, in conclusion, to add my own views and experience upon this subject. While I have never instituted any scientific investigations, nevertheless, I have had (during a very extensive surgical experience, both in the army and private practice) a pretty good opportunity of witnessing the effect of this agent upon persons laboring under shock. My experience has been, that alcoholic stimulants are very liable to produce extreme nausea, vomiting, and depression of the vital powers. I have thought that they retarded reaction and increased the depression. So marked have been these results, and so distressing their effects, that I have, long since, avoided their administration. I have substituted hot coffee, hot teas,

and hot broth, when obtainable, and have been much better pleased with their effects.

Understand me, I do not advocate the extreme touch not, taste not, and handle not principle, I still claim alcohol as a valuable remedial agent; I believe it well worthy of a place in our materia medica—not as a stimulant, not as food, not as a tonic, *but as an antiseptic*; I believe that its great office is to prevent septimias, and, therefore, that it is a valuable remedy in the various zymotic and suppurative diseases. While I would have it retained in the materia medica, I would also have it labelled on every druggist's shelf as an *acrid, irritant poison*, to be used with much care, in extreme cases, *never, under any circumstances, as a beverage*, BY A PRACTITIONER OF MEDICINE, AT LEAST.

ARTICLE L.

TRIAL OF TETRACHLORIDE OF CARBON AS AN ANÆSTHETIC.—DANGEROUS EFFECTS.

By E. ANDREWS, M.D., Prof. of Principles and Practice of Surgery,
Chicago Medical College.

In a letter written a few months ago, to the EXAMINER, I called attention to the new anæsthetic called tetrachloride of carbon, introduced by Dr. PROTHEROE SMITH, of London. Dr. SMITH had used the article in about one hundred cases; and was disposed to believe it safer than chloroform and far more agreeable than ether. On my return to this country, I brought a sample of it with me, from the same establishment which supplies it to Dr. SMITH. I had a patient, upon whom it became necessary to perform the operation of resection of the hip-joint, and who had previously suffered so much nausea after the inhalation of ether, that he very much disliked to take it a second time. As one of the chief advantages of the tetrachloride of carbon is its freedom from nauseating effects, I deemed it best to use it in this case. Having no such inhaler as is used by

Dr. SMITH, I employed a napkin, placed in a paper cone, and held a short distance from the face, as in giving chloroform. My friend, Dr. SHERMAN, whose experience in giving anæsthetics amounts to some thousands of cases, took charge of the inhalation, and proceeded with rather more caution than he would with chloroform. Nothing remarkable occurred at first, but after the lapse of a few minutes, the assistant, whose duty it was to watch the pulse, observed that it increased suddenly in frequency, so that in a short time he was unable to count it. At the same time, the patient, who was not yet unconscious, complained of a violent pain, as of cramp, in the vicinity of the heart, and after a moment more, the pulse and respiration both suddenly ceased. The patient's head was spasmodically drawn backward, the countenance looked pale and deathly, and the pupils of the eyes dilated until the iris could scarcely be seen. Artificial respiration was at once commenced, and strong aqua ammoniæ was rubbed in the nostrils, under which treatment, the patient revived again, although to all appearance almost dead. The anæsthesia was then completed by concentrated sulphuric ether, without further accident, and the carious bone excised in the usual manner. I do not think that there remained any prolonged unfavorable effect after the use of the tetrachloride, but the sudden advent of such urgent and dangerous symptoms made a strongly unfavorable impression on my mind, for the patient was much nearer death than I ever saw one go under ether. I certainly shall not venture on the use of the article again, unless very extensive experience by others demonstrates its safety.

It is proper to state that the patient was in a very exhausted and anæmic condition from the effects of disease, and was operated on as a last, desperate resort, having no other hope of life. He rallied from the operation pretty well, without showing any signs of injury from the tetrachloride, but died, subsequently, from exhaustion.

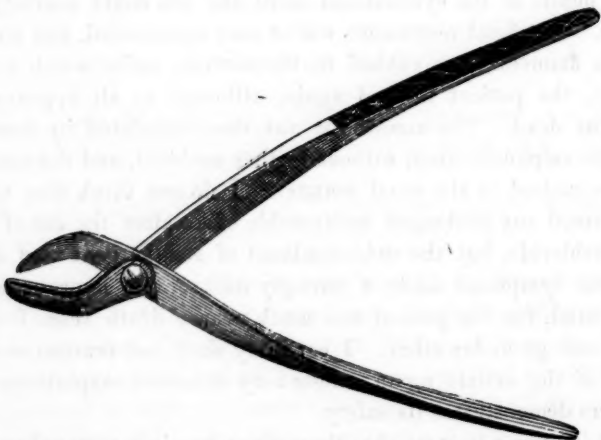
81 Monroe St., Chicago, Nov. 4, 1867.

ARTICLE LI.

A NEW ECRASEUR FORCEPS.

By E. ANDREWS, M.D., Prof. of Principles and Practice of Surgery,
Chicago Medical College.

Nearly a year ago, I devised an instrument, intended as a substitute for the ecraseur, which I named the ecraseur forceps. I afterwards saw an instrument, invented by Dr. SMITH, partly involving the same principle. The form which I had adopted was quite different from the other, and offered several points of superiority over it. The subjoined wood-cut gives a correct idea of its construction.



It consists of a strong pair of forceps, of which the length of the jaws is to that of the handles as one to four. One jaw is thick, and has a slot through nearly its entire length; the other is thinner, and plays through the slot, as the chain of the ecraseur plays through the opening in that instrument. The jaws are bent towards each other, in such a way that the beaks pass first, enclosing the tissue to be crushed in a diamond-shaped loop, which grows smaller in all directions as the jaws are

pressed together. They act, therefore, very much like the chain of the ecraseur, in gathering all the tissue towards a common centre, under a powerful compression, before they crush it asunder. The edges of the jaws are rounded, to prevent them from cutting like scissors.

This instrument has many advantages over the chain ecraseur, among which is, the ease of its application to almost all sorts of cases. For instance, in removing tumors from the side of the tongue. The chain of the ecraseur has to be drawn through the tongue by a needle and thread, from which the chain must then be detached and attached to the instrument, before the operator can proceed; but in the ecraseur forceps no such trouble is necessary. The surgeon simply applies his instrument to the tongue, like a pair of scissors; the beaks sink through the organ, at the exact spot where they are placed; and the enclosed tissue is instantly under the gathering compression of the jaws. A second application, on the other side of the tumor, completes its removal. In removing piles, it operates admirably well. In case of a large tumor, whose pedicle cannot be wholly grasped at once by the jaws, it is simply necessary to take it at two or three bites. A collateral advantage of these instruments is their cheapness. They are made by Tolle & Degenhardt, Chicago, for from three to four dollars, while a chain ecraseur costs from ten to twenty dollars, according to size. The only objection to it is this:—Ecraseur work should always be done slowly. It is by the *gradual* compression that one makes sure of closing the vessels so as to avoid hemorrhage. The chain ecraseur tightens with a screw, whose turning requires time, and thus compels deliberation; while in the forceps form, it is in the power of a careless surgeon to grip the handles quickly together, and make the sundering of the tissues too sudden. In using it, the surgeon should compress the handles slowly and gradually, allowing about a minute to each act of crushing.

ARTICLE LII.

ON THE SOCIAL EVILS, WITH A PLAN FOR THEIR
DIMINUTION, AND A PLEA FOR THE INNOCENT
AND HELPLESS.

BY GEO. J. ZEIGLER, M.D.

The subject of the limitation of prostitution with its dreadful concomitants, so ably treated of by Prof. ANDREWS, in the last number of your excellent journal, is one that appeals to every true philanthropist, and especially to the members of the medical profession, who are, unfortunately, better practically acquainted with its terrible evils than any other class of men. But, while it is desirable to ameliorate the disorders of the body politic, induced by the illicit intercourse of the sexes, it is much more essential to remove the primary causes of such abnormalities, in order to prevent their occurrence and preserve the health and purity of society. This, however, can only be effected by acting in accordance with the natural laws for the development of life and the government of humanity.

Among the many millions of human and other living beings existing in the world there is a certain degree of sexual activity for procreative and other purposes. This sexual instinct is so strong and energetic in the mass of mankind that it cannot be restrained, and in one way or another must be satisfied; for it is a well-known fact that, if these natural desires are not legitimately gratified, irregular indulgences and disorders of various kinds ensue, prominent among which are derangement of the brain, nervous system, genital apparatus, etc., with demoralization, unnatural habits, illicit intercourse, diseases of the sexual organs and general system, and premature destruction of life. Now, as these natural appetites cannot be repressed, they must be regulated, by so reorganizing society as to permit or compel a more regular flow of the sexual current and equable reunion of the sexes.

Prostitution, with its attendant evils, is the more immediate

result of a defective state of society, for, though dependent, primarily of course, upon the undue activity of the sexual appetite, it is always increased by the difficulty of legitimate association and the false ideas respecting marriage, in which woman is placed at a great disadvantage. The prevalence of prostitution cannot be wholly attributed to the inherent depravity of those who sink into it, but mainly to necessity and the extraneous force of circumstances, as it is most likely that woman is generally influenced in her sexual relations more by the strength of her sympathies and the warmth of her affections, than the intensity of her animal desires; for, were it otherwise, the world would be sunk in the grossest licentiousness.

Now, as there are comparatively few women who voluntarily become prostitutes, some decided effort should be made to prevent this wholesale sacrifice of so many of the fairest and purest of our kind, for it is a lamentable fact that the majority of those who thus lapse from virtue are the healthiest and handsomest of their sex, strength and beauty being powerful incentives to sensuality and essential elements for the successful pursuit of a disreputable life. Besides, the necessity for some positive effort in this direction is the more imperative, as the evil is not limited to any one class, but involves, to a greater or less extent, the whole human family, society being thus doubly outraged by the withdrawal of so much that is desirable for the legitimate relations of life, and the reactive injury to the body politic from the poison engendered therein by the vicious action of many of its most vigorous members of both sexes. But, for the requisite efficiency, such action must be based upon the fundamental principles of equity and justice, by fully recognizing the correlative rights, duties, and obligations of the respective sexes. That these are entirely too much disregarded at present, is apparent; for, as it now is, a man may corrupt and seduce a woman, debauch and disease her body, impregnate and beget her with child, and then discard her as a strumpet, he being comparatively free to leave her and repeat the fiendish act with others of her sex, with little risk from the law or loss of social caste. It is, however, quite the reverse with the mis-

guided woman, for, on disclosure of her frailty, there is immediate loss of social status, and her only alternative is either to seek personal or legal redress with the publication of her dishonor, or to remain quiescent and hide or endure her shame as best she can, or give herself up entirely to an abandoned life; and, when impregnated, to resort to abortion and commit child-murder in the wild effort to save her reputation, or submit to exposure and live the balance of her days under the ban of reproach as a degraded being—from which she may, perchance, be relieved by an acknowledged marriage, or, finally, as is so frequent, lapse into prostitution; while her innocent child is regarded as a waif, treated as an interloper in the human family, and branded with the ignominious titles of illegitimate, natural, bastard, etc.

The same injustice is also manifested in the general action of society, in the difference between the penalty inflicted in a simple breach of promise of marriage and seduction, for a man is apt to incur more social obloquy and greater legal punishment for the mere violation of a promise of marriage by word of mouth, than for the actual degradation of the woman by seductive cohabitation, the injury to the female being comparatively slight in the former to that of the latter—attended, as it always is, with loss of virtue, often, also, character, and, frequently, utter ruin; yet, the latter is treated so generally as the lesser, and the former the greater crime.

Now, this is obviously all wrong; yet, as a necessary result of the present imperfect social system, it is maintained as right, thus sanctioning evil and sustaining measures tending to the permanent degeneracy of the race, when by conforming more with the natural laws of life, such deterioration might readily be obviated. But to this end, as before intimated, there must be a radical change in the present views and customs of society respecting the natural affinities of the sexes, marriage, procreation, the rights of children, and the relations of life in general.

It is an acknowledged fact, that there are supreme natural laws governing the action of individuals and of the entire body politic, relating to the association of the sexes, births and deaths,

as of everything else, and all issues in accordance therewith are necessarily legitimate, and cannot, without positive perversion, be regarded otherwise; hence, the usual conception of illegitimacy is, it appears to me, altogether wrong, being based upon false premises. Indeed, the prevailing ideas respecting this subject of illegitimacy are so erroneous as to be a disgrace to the vaunted intelligence, christianity, and civilization of the age. Thus, in the case of children, for instance, the very fact of their birth makes them legitimate in the natural order of things, the same as the production of the lower animals and other forms of life. But, even according to human estimate, there are very few children who could at all be considered otherwise than legitimate, and these only from the association of married men with single women or other men's wives, and single men with married women; all others are, unquestionably, entitled to immediate acknowledgement, and should be legitimatized by legal enactment recognizing the fact that *cohabitation and marriage go together*, the fact of sexual union being sufficient evidence of marital consent on the part of those thus indulging. This act of sexual conjugation being voluntary on the part of both male and female, and the essential element for procreation—the ultimate design of marriage—should be as conclusive of the marital union of men and women by the laws of man as they are by those of God; for, as generation occurs from sexual intercourse by the operation of the laws of life, without regard to human ordinances regulating the marital relation, it is, in reality, the only natural and true marriage physically considered, and, humanly, should be so acknowledged. Hence, as these so-called natural children are the fruit of a natural union of the sexes, and the product of natural marriage, by the operation of natural laws they have, *ipso facto*, the natural right to legitimacy, and should be legitimatized by human as they are by divine power, while their progenitors should be bound together by their marital tie, as well as obliged to recognize and provide for their offspring. Moreover, in those cases of forced conjunction, as in rape, the permanent association might also be made obligatory, if the injured female should decide

that the union, thus involuntarily formed on her part, should be binding, although, even here, in the absence of such desire for its continuance, when impregnation occurred, justice would demand some provision for the legitimacy of the progeny, which might be effected by the application of the same rules as govern in divorce. Of course, if the decision of the woman be adverse to this coerced marriage, the ravisher should be severely punished, as usual. Furthermore, even in those apparently exceptional cases, arising from the intercourse of married men with single women or other men's wives, or single men with married women, the children should also be legitimized by direct affiliation on the father.

These views are necessarily based upon the idea of monogamy—or the union of one man with one woman—and limited, of course, to those thus first cohabiting; or, secondarily, only as at present, by the loss of the former companion, all other connections being polygamous and illegal, to be punished as bigamy.

This plan is not, however, intended to interfere with the usual preliminary espousals, but designed rather to enlarge the sphere of legitimacy to its natural limits, in enforcing the recognition of an union contracted without preceding nuptial formalities, by legalizing marriages thus naturally consummated, and legitimizing children engendered and born out of ordinary wedlock, thereby lessening seduction and diminishing illicit intercourse with its attendant evils.

The general adoption of this plan of legalizing marriages sexually consummated, would undoubtedly result in great good to all and harm to none, as, like the pledge by word of mouth, it would bind parties together only by their own act, force them to regard the sacred obligations thus incurred, and compel them to legitimize and care for their progeny, the same as the more honorable always voluntarily do. To say nothing of the demoralization of men and women from illicit association, it is the height of cruelty to allow innocent beings to be thrust into existence tainted with dishonor, which, in the present state of public opinion, can never be effaced. Society has no right thus to brand the innocent with infamy and debar them from the

normal relationship of life, whatever it may do with their offending parents. But, aside from the gross injustice of the act, and in view of the supremacy of the natural laws for the evolution of life, it is perfectly absurd to deny to children thus organized the claim to a legitimate birthright. It is just as foolish to thus proscribe these unfortunates, as it would be to reject the fruit from the tree because it had not grown in accordance with human ordinances, both being equally passive in their development within the great organism of life.

Thus, by the legal recognition of the fact that *the act of sexual conjugation constitutes marriage*, and binds the cohabiting parties as closely together in the marital relation as extraneous nuptial ceremonies now do, all disgrace would disappear, morality be promoted, weak women and innocent children protected, seduction, abortion, child-murder, prostitution, degradation, disease, and premature death diminished, and society be relieved of much of the evil which now so justly afflicts it, for permitting the present shameful state of things to exist.

It is, hence, both inexpedient and unwise, as well as unjust, to tolerate a system at variance with the principles of physiology, morality, religion, civilization, and infinite justice, which entails so much misery upon innocent beings and humanity in general, when, by the adoption of a more perfect jurisprudence, relief could be so readily obtained and mankind so greatly benefited.

Believing the preceding to be the true solution of a great social problem, and its practical application of inestimable value to humanity, it is the earnest hope of the writer that these few thoughts may enlist the sympathies and unite the efforts of all philanthropists to enact this suggestion into a rule of life, by proper education of society and suitable legislation on the subject, thus bringing human jurisprudence in entire harmony with the natural laws.

But as medical men are most familiar with the principles involved in this great question, and their influence is commensurate with their knowledge, they are especially invited to give this proposition their serious consideration, with a hearty coöper-

eration, to insure the substantial realization of the proposed, or some better plan for thus benefiting their fellow-beings.

Philadelphia, Nov. 2, 1867.

Selections.

CLINICAL PAPERS ON EAR DISEASE.

By D. B. ST. JOHN ROOSA, M.D., Prof. in the University Medical College.

NO. I.—INSPISSATED CERUMEN.

It is intended, in the papers which are proposed under the above title, to present some of the practical results of an experience in ear diseases, reaching over quite a large number of cases, in such a way that they may be useful as a guide to those who see comparatively little of the diseases of this organ.

Among the laity, and even in the profession, hardening of the ear-wax is regarded as quite a common and harmless affection. All forms of deafness are ascribed to this cause, and the first treatment that many ear patients receive, is a vigorous syringing to see "if the wax be not hardened," and this often without any preliminary examination. Impacted cerumen is indeed quite a common occurrence, but it is by no means as simple an affair as has been generally supposed. I do not mean by this, that it is anything more, as a general thing, than a local affection, but as such, it may produce results very detrimental to the function of hearing. It hardly seems to occur more frequently in persons with a soft skin than others, as has been suggested by some authors, for among the patients whom I have seen, careful examination has failed to detect any such origin. Persons with a dry and harsh skin have as often come to me with impacted cerumen, as the opposite class. A frequent cause is the too careful washing of the auditory canals with soap and water, which some over-clean persons delight in doing. This rinsing out the canal plugs the natural yellow wax, which is on its way out, down to the bottom of the canal, and being continued morning after morning, at last fills up the ear, and when the drum is once fairly covered, and pressed upon, and *not till then*, deafness results. It is somewhat remarkable how long persons may have the ears plugged up with hard wax without being aware of it. On examining persons who present

themselves with impacted wax, only causing deafness on one side, we will nearly always find the same condition of things as to the wax, in the other ear. If the cerumen be very black and hard, and if it comes out in one large plug, we may conclude that it has been there for years. I recall two cases in which, from definite accounts, we could safely conclude that five years had elapsed since the deafness occurred. In both of these cases, the hearing became normal after the wax was removed. Impacted wax sometimes causes serious inflammation of the canal and drum. In one case, that of a young lady, suppuration of the drum resulted from hardened wax pressing upon it, and the wax was removed spontaneously like a shot from a pistol, and, as was stated, with almost as loud a report. This evacuation was preceded by the most intense pain. The removal of a plug three-fourths of an inch long from the other auditory canal, and which was wedged in very tightly, saved the patient from the inflammation which was so troublesome on the other side. In another case, still under treatment, what was supposed to be on first examination a plain case of inspissated cerumen, was found, after removal of the wax, to be one of inflammation of the integument which lines the canal. The removal of the hardened wax was, as it were, only the removal of a huge scab from an ulcerating surface. I have seen other cases like this.

Inspissated cerumen causes many symptoms. The prominent ones are:

1. Sudden deafness.
2. Tinnitus aurium.
3. Vertigo.
4. Earache.

Of course, an examination is the only method of clearing up the diagnosis. This examination should be undertaken with the ear mirror, (or otoscope, properly called,) and not with the syringe. In other words, it should be ocular, and not tactile. The trouble can hardly be confounded with any other affection. Wax which presses upon the drum is almost always black, not yellow, and nearly fills the canal. No decided prognosis can be given from seeing the wax, as to whether its removal will restore the hearing. Hardened cerumen very often forms over a perforated or ulcerated membrana tympani, and is then of course only a small part of the disease. It often results, also, from the dropping of oils into the ear for some therapeutical end seldom attained. The original disease for which the oils were used was then probably an affection of the cavity of the tympanum.

The habit of examining the ear in all cases with head symptoms, will sometimes assist materially in clearing up a diagnosis. I once cured a man from the effects of a supposed sun-stroke, by removing inspissated cerumen, who had been treated for two months in a hospital for cerebral disease.

Patients who have once had impacted wax, are apt to suffer again from the same cause, at least I have seen quite a large proportion of cases in persons who have been affected in the same way before. Such may be advised to have their ears syringed with a solution of bicarbonate of soda and water, about once in two months. The removal of the hardened mass is very often a tedious affair. I once spent an hour a day for a week in removing a mass from the ear of a lady patient. In the interim, the best solvents, such as soda, were used. With previous soaking the canal with a warm solution of soda, say a drachm to the half pint, ten minutes will generally suffice to remove the mass. A good india-rubber syringe, holding at least four ounces, should be used, and the auditory canal well straightened by holding up the auricle with the left hand, at the same time syringing with the right. The glass syringes are of no use. The stream sent in should be vigorous but steady, and care taken not to eject it with such force as to cause pain or dizziness. There should never be any pain caused in syringing the ear for any purpose. Where pain is produced, syringing will do harm. A thin bowl is held under the ear by the patient. No assistant is needed. No towel need be placed on the patient's neck, for, with careful manipulation, no water will be spilled.

The ear may contain an astonishingly great quantity of hardened ear wax, and an examination should be made very frequently during the course of the syringing to determine when it is all removed. No after-treatment is necessary. If, however, sounds are oppressive, as they often are, after the removal of large quantities of ear wax, a little cotton may be worn in the meatus for a day or two. The membrana tympani always appears reddened immediately after the removal of the cerumen, and then dull. It will be some days before it regains its normal translucency. If the hearing be not improved immediately on removing the wax, the middle ear should be inflated by Politzer's method. The drum is sometimes sunken in temporarily, and one or two passages of air through the eustachian tube will restore its position as well as the hearing.

Professor Gross recommends the use of a pick for the removal of impacted wax. This does very well as an aid where the wax is very hard. If it be used, the surgeon should have a mirror

on his forehead, and never put the pick in the canal, unless he can see just what he is doing. Painful and even destructive inflammation may be caused by this mining out process. The general practitioner, to whom ear cases come in only a small proportion in his daily rounds, had much better rely on the use of a syringe and warm water where possible, having previously moistened the canal with a warmed solution of soda, zinc sulph., or with glycerine and water, sweet oil, etc. Inspissated cerumen rarely occurs in children. I suppose there is no difference in the liability of the sexes, and I know of no well-established proximate cause, except the one given in the beginning of this article, *i.e.*, packing the meatus by the frequent pouring in of water. Yet, we might say that it is common for hardened wax to collect about a foreign body in the ear, such as a raisin, introduced originally to relieve earache, a cherry-pit, etc., but here the inspissated cerumen is only a concomitant. It is hardly to be credited, although formerly generally believed, that a diathesis has anything to do with it, or that there is any disease of the ceruminous glands. The cause is probably in one way or another mechanical—that is, there is some interference with the normal and daily removal of the secretion.—*Medical Record.*

DELIRIUM TREMENS SUCCESSFULLY TREATED WITH COFFEE.

By WM. R. WHITEHEAD, M.D., New York.

Recently, in a case of delirium tremens, I observed a peculiarly marked tranquillizing effect caused by strong coffee, and which produced prolonged and refreshing sleep, after the usual remedies had proved ineffectual.

Mr. C., a merchant, visiting New York on business, who had been drinking very hard for several days, was taken with delirium tremens on the 13th of last March. His friends stated that they believed this to be his first attack. He was seen by a physician on the 15th, but did not receive further medical attention until the night of the 17th, when I was called to see him. He exhibited the usual symptoms, with the exception of a remarkable absence of muscular twitching on feeling the pulse. His hallucinations were at times very amusing; he was not disposed to be violent, but was quite tractable and easily controlled by his attendants. A mixture containing about a

drachm of chloroform to the dose, was prescribed to be taken every few hours.

The next morning, he was more quiet, having slept about two hours during the night, and for the first time since his illness. The condition of his bowels, his urinary and other secretions, were carefully observed. His tongue was large, white, and moist. Some pills of opium were substituted for a mixture containing chloroform and tincture of hops, ordered early in the day. A small quantity of ale was permitted, and some beef-tea and chicken-broth ordered. At night, he was very restless; his pulse at one time could not be felt; his extremities became cold and respiration labored. I gave him half a glass of whiskey.

On the morning of the 19th, I was told that he slept an hour or two soon after drinking the whiskey; his skin was jaundiced, and he was costive. Twelve grains of blue mass were prescribed, which failed to produce the desired effect. At night, eight grains of calomel were given, to be followed in the morning by a clyster. He vomited several times during the day, but retained the nourishment which he had taken.

On the 20th, his bowels were slightly relieved, his skin was moist, and pulse good. I prescribed sulphate of morphia, in half-grain doses; he became quite restless during the day.

The next day, there was no sensible abatement of the restlessness, and he was not free for any length of time from ludicrous or disquieting hallucinations. At no time, however, was he violent, nor did he manifest great fright. The sulphate of morphia was repeated; he took some nourishment; his bowels were moved with a clyster. Complaining of soreness in the stomach; a blister was placed on the epigastrium.

On the 22d, at the morning visit, being satisfied that the morphia had failed to afford relief; bromide of potassium was given, twenty grains at a dose, every two hours, in a suitable mixture. At the third dose, he became more restless and excited than he had previously been. The bromide was discontinued, and three subcutaneous injections of Magendie's solution of morphia were made, of thirty drops each, at an interval of one hour between each injection. They failed to produce the slightest apparent effect. He drank half a glass of whiskey, which seemed to quiet him considerably. He took frequently during the day Tourtelot's beef-essence with much relish.

On the morning of the 23d, I was told that after drinking the whiskey, he slept three hours, but I found him quite restless. Bromide of potassium was prescribed, in drachm doses,

of which he took two, each at an interval of two hours. At half-past four P.M., he was much more quiet. He asked for a cup of coffee, which he drank very gratefully, and at the same time ate a small piece of bread. Ninety grains of bromide of potassium were ordered at a dose, in which doses, I was reliably informed, it had been recently given successfully in delirium tremens at the New York Hospital. During the night, two doses of the bromide were administered. His urine was abundant and clear; pulse strong and full. He slept about an hour that night. The next day, his bowels were slightly moved with a clyster. The bromide of potassium was repeated twice, in doses of ninety grains, and produced at the second dose some anæsthesia of the skin.

On the 25th, Prof. Willard Parker saw him with me, and observed the same absence of muscular twitching to which I have already alluded. It was decided that the patient should have his body and limbs well rubbed after being washed; that he should be permitted to have a cup of coffee, and as much nourishment as he could be induced to take. At night, a hot whiskey toddy was to be given to him, to be succeeded by inhalations of ether, but the ether was not given.

At the morning visit the next day, I found that he had not slept during the night, and was very restless. The toddy seemed at first, as his nurse informed me, to make him more quiet; but he soon became much more restless after than before taking it. Chloroform, opium, brandy, and bromide of potassium had been each unsuccessfully essayed; the last of these substances in such doses as thoroughly to test its action. One prominent idea, however, governed my course throughout the treatment—it was properly to nourish the patient. I regarded the alcohol as a poison to be eliminated, but considered that the equilibrium of the nervous system should be gradually reëstablished by suitable stimulants. Only temporary benefit resulted from the remedies used; and if at times they failed to produce any appreciable good, they, on the contrary, once or twice seemed to be productive of harm. When quiet and sleep did not immediately follow the use of brandy, the restlessness was much increased. Morphia appeared to be positively injurious. The bromide of potassium, in doses of twenty grains, greatly excited the patient; increased to drachm doses, and then to doses of one drachm and a-half each, made him a little more quiet. I was not encouraged, however, to continue any longer these remedies, but disposed to discontinue further medical treatment, and rely upon the gradual assimilation of concen-

trated and nutritious food, to allay the nervous excitement, and produce sufficient recuperative sleep.

The patient had, several days before, expressed a wish for coffee, which he seemed to relish. It now occurred to me that coffee, acting as a food, containing nitrogenous principles, and also as a special nervous stimulant, might in this case, by its peculiar action, if given in sufficient quantities, produce a quieting effect, and induce sleep. Consequently, coffee was tried; and the issue of the experiment proved to be successful.

At two o'clock P.M., about a pint of very strong coffee was prescribed, with a little cream, enough to make it palatable for him; and a broiled steak ordered, a part of which he ate. At eight o'clock P.M., I found that he had slept four hours. He drank again a large cup of coffee, and took fifteen grains of blue mass.

On the 27th, at the morning visit, I found that he had slept nearly all night, but was then restless. His bowels had been moved, and his general condition was very much improved. Very strong coffee was again prescribed, and at half-past twelve o'clock P.M., I found him asleep. After this, the coffee was repeated a few times; he continued to improve, and soon recovered.

Probably this nervous stimulant, by imparting an increased tone of a peculiar character to the general system, reëstablished its equilibrium and caused sleep, when other stimulants, acting in a different manner, failed to produce this result. This, however, is merely a conjecture, and may possibly be explained by others in a more satisfactory manner.—*Medical Record.*

ACTION OF BELLADONNA IN DISEASE OF THE CORNEA.

By JOS. S. HILDRETH, M.D., Chicago, Ill.

THE use of belladonna, or other mydriatic, in some forms of corneal disease, is indispensable; while in others it becomes unnecessary, and often injurious.

From the complex structure of the eye, rendering it susceptible to numerous pathological changes, arises this apparently diverse action.

In the normal eye, the cornea is endowed with a delicate sensitiveness to the lightest touch; the pupil quickly responds to

the influence of atropia, and its effects are quite persistent. This corneal sensitiveness remains, whether the pupil be dilated or contracted.

But clinical observation has demonstrated a condition of the eye in which the nervous integrity of the cornea is so disturbed as to cause a peculiar state of anæsthesia; the dilatability of the pupil is correspondingly lessened, and the effects of atropia are of shorter duration.

By gently touching the cornea with the point of a small camel's hair pencil, previously wet and stripped quite dry, or the point of a small roll of soft paper slightly moistened, the degree of anæsthesia is determined.

By instilling one drop of a solution of atropia of definite strength* within the lids at intervals of fifteen minutes, the dilatability of the pupil can be estimated.

These signs are pathognomonic of a condition which appears to be due to some defect of nervous action, which causes contraction and congestion of the ciliary ring.

The symptoms may be acute, with more or less congestion, or chronic without it.

There is another distinct form of corneal anæsthesia, which occurs in all glaucomatous affections. It is invariably produced by intra-ocular tension, and with a pupil dilated or readily dilatable; and, therefore, materially differs from that above described.

As there is no intra-ocular tension, and dilatability of the pupil is invariably diminished in the former, I have designated it as anæsthesia of the cornea and radiating fibres of the iris *without intra-ocular tension*, in contradistinction to the latter.

It is found that, as the depressed vitality of the cornea improves, normal dilatability of the pupil returns. To dilate and so maintain the pupil, relieves the anæsthetized cornea.

Nov. 30, 1866. Mr. B——, aged 35, bookkeeper. Slightly scrofulous and debilitated by overwork.

Four months previous had an attack of iritis in left eye which lasted two weeks. It was uncomplicated; no injury resulted; accommodation and vision were good. Was able to use both eyes without difficulty on the 28th. Felt trouble in the left eye the 29th, for which no cause can be assigned.

An irregular transparent ulceration quite deep, three millimetres wide, extends from lower margin of cornea four millimetres towards the pupil. The adjoining parts appear slightly infiltrated. The cornea is anæsthetized, especially the inferior

* Four grains of neutral sulphate of atropia to one ounce of water.

three-fourths. The pupil, smaller than the opposite, feebly responds to reflex movements and light. No other apparent disturbance of cornea or iris. Slight perikeratic injection. No inflammation or anæsthesia of conjunctiva, sclerotic, or lids. No evidence of paralysis of any part. Moderate photophobia and pain in central parts of globe.

Three drops of atropia solution, instilled within the lids five times during one hour and a-half, produce dilation of the pupil, and diminish corneal anæsthesia.

To apply two drops of same solution, within the lids, four times during the next twenty-four hours, and keep the eye well shaded. No other treatment.

Dec. 1st. Pupil more dilated; corneal anæsthesia nearly removed.

The ulceration is covered by a grayish exudation, and the remainder of the cornea is transparent. Perikeratic injection has nearly disappeared, and pain abated. Continue treatment.

Dec. 2d. Pupil well dilated; cornea quite free from anæsthesia; reparative exudation augmented. Continue treatment.

Dec. 4th. Pupil largely dilated, and no anæsthesia of cornea. Ulceration improving; no perikeratic injection or pain. To apply one drop of atropia solution twice daily.

The tongue being coated, with sensation of dryness of the fauces, muriate of ammonia mixture ordered.*

Dec. 10th. Repair of cornea quite complete. A few delicate vessels pass from its border, a short distance upon the newly formed material. Cornea free from anæsthesia, and pupil largely dilated.

Muriate of ammonia mixture, and atropia discontinued. Brown's citrine ointment to be applied three times weekly to the conjunctiva. To take a tonic mixture of bark and iodine.

Dec. 28th. The ulceration has healed, leaving a slight bluish trace. The pupil free in its movements, responds to reflex movements and light. Cornea free from anæsthesia. Vision and accommodation good.

In this case congestion and contraction of the ciliary ring produced anæsthesia of the cornea and radiating fibres of the iris. The patient being scrofulous and debilitated, keratic ulceration speedily followed.

* R.—Ammonie Muriatiss,-----	1 dram;
Potassæ Chloratis,-----	as dram;
Aque Destillatæ,-----	3 f oz.
Syrupi Auranti,-----	1 f oz.—M.

Sig.—One teaspoonful from three to six times daily.

Atropia, by relieving the congestion and contraction of the ciliary ring, restored the nervous integrity of the cornea, and allowed the reparative process to go on.

Sept., 1866. W—, aged 18, printer. Constitution good, little debilitated. Cornea largely nebulous; the epithelium and parts immediately beneath being disturbed. Pupil partially dilates with free use of atropia.

With contracted pupil, cornea anæsthetized; with dilated pupil, nearly free from anæsthesia. No other apparent disturbance in cornea or iris. No perikeratic injection, or inflammation of sclerotic, conjunctiva, or lids. No evidence of paralysis of any part, or anæsthesia of conjunctiva, lids, or face. Pain in central parts of globe.

This patient was under observation for over six months. Shortly after commencement, he took a small quantity of iodide of potassium. No other general treatment was employed.

The pupil was dilated by atropia, and red precipitate ointment* applied within the lids once to three times weekly. Towards the close, the yellow amorphous oxide of mercury, in ointment,† was substituted four times, at intervals of a week.

While the pupil was kept fully under the influence of atropia, progress on the part of the cornea, was very manifest; but as soon as the pupil was allowed to contract, the cornea made no improvement.

This was frequently repeated, and, as in all similar cases, with the same result.

April 13, 1867. Pupil normally dilatable; reflex movements, vision, and accommodation are good.

In this case, contraction of the ciliary ring, without apparent congestion, produced corneal anæsthesia and diminished dilatability of the pupil.

The condition of the cornea indicated stimulation; but this could not take effect until the ciliary ring had been relaxed by belladonna, and the corneal nerves relieved.

* R.—Hydg. Oxyd. Rub., 8 grains;
Hydg. Chld. Mite, 12 grains;
Pulv. Camph., } as 1 grain;
Zinci Sulph., }
Axungie, 2 drams;

Misce bene. Sig.—A piece the size of a grain of wheat within the lids.

† R.—Hydg. Oxyd. flavi, ss dram;
(via humida parati)
Axungie, ss oz.
Misce bene.

Sig.—To be used in the same manner as the red precipitate ointment.

From numerous observations, the above cases have been selected as representing acute and chronic forms of anæsthesia of the cornea, and diminished dilatability of the pupil arising from those disturbances in the ciliary ring specially described, and illustrate the action of belladonna in this class of cases.

Injurious results have not been observed to follow its protracted use. But, when these conditions are absent, mydriatics are not requisite in uncomplicated keratic disease, and often become injurious, by producing atropinism of the eye.

Hence, in affections of the cornea, occurring: *a.* With anæsthesia and diminished dilatability of the pupil, belladonna is indicated. *b.* With normal dilatability of the pupil and absence of corneal anæsthesia, belladonna is not required.

The conditions indicating the use of mydriatics frequently exist to a degree requiring surgical interference to enable the drug to take effect.

Division of the ciliary ring is then often required.

Inasmuch as more or less of the aqueous humor escapes during this operation, the beneficial results are attributed, by some, to diminished intra-ocular tension. By direct experiment it has been demonstrated that relief of corneal anæsthesia and diminished dilatability of the pupil, in these cases, are the result of a thorough division of the ciliary ring, and not due to evacuation of the aqueous humor.

Paracentesis of the anterior chamber may in some cases of this class prove serviceable by diminishing congestion of the ciliary ring, but not otherwise.

In one instance, contraction of the ciliary ring was found to co-exist with glaucoma.

Iridectomy necessarily removed all intra-ocular tension, but failed to relieve the corneal anæsthesia. Division of the ciliary ring fifteen minutes afterwards at once accomplished that result.

The length and title of this paper preclude anything further upon surgical treatment.—*Trans. of Amer. Med. Association.*

WEIMAR CHOLERA CONFERENCE.

The following from a communication from Dr. ELISHA HARRIS to the President of the New York Board of Health, has been long awaiting a place in our columns:

Having been favored with an abstract of the discussions and concluding recommendations of the Cholera Conference that

recently met at the city of Weimar, and having learned from Prof. PETTENKOFER that the full stenographic report of the Conference will be published at Leipzig during the summer, I now lay before the Board of Health a synopsis of the discussions and their conclusions as given in this abstract.

You will recollect the polite invitation that was extended to New York to be represented at that important meeting. It turned out to be precisely such a Conference as the interests of public hygiene required, for the most practical and comprehensive questions were discussed by the leading sanitary scholars of Europe, nearly 60 delegates being present. The following conclusions were adopted, and I beg leave to present them here before giving the synopsis of the debates of the Conference.

CONCLUSIONS AND RECOMMENDATIONS.

I. The Conference expresses as its deliberate conviction that the efforts to arrest and prevent cholera by disinfectants, should be continued in the most energetic manner.

II. Disinfection will be entirely successful only where excremental matters are carefully gathered and kept from being cast about; when attention is given to the cleanliness and the means of health; and when the disinfection is performed by sanitary authorities in a compulsory manner.

III. In places where the entire locality or district cannot at once be disinfected, it is advisable to disinfect throughout the places visited by the previous epidemics of cholera.

IV. The general disinfection should be performed at the proper time, that is, before the epidemic is actually prevalent in town or place. Every house or spot that becomes infected or is suspected to be so, must be kept constantly under the influence of disinfection.

V. In regard to the best substances as disinfectants, though the testing of various articles is not completed, there have been found, to the present time, no more effectual substances than sulphate of iron (copperas) and the carbolic acid; and, as experience proves, we have no other disinfectants that can be employed with greater facility. A combination of both these disinfectants is therefore recommended.

VI. The disinfection of clothing that has become infected by cholera excrement is especially an important matter. For that purpose the Conference recommends that all such clothing be disinfected by boiling in water, or by chemical treatment in a proper solution of "zinc vitrol" (sulphate or chloride of zinc), and the Conference also recommends that special arrangements

be made by which disinfection can be employed in all places, and at any hour, among or for the poor.

VII. For the disinfection of sewers and drains, the Conference advises the trial of Mr. Sauvren's method. [The means used by Mr. Sauvren are not yet fully published, but they are believed to be similar to McDougall's—namely, combination of a carbolic or coal-tar preparations, in a cheap form.]

VIII. If cholera infects any house or spot, it is recommended that, if practicable, the houses so situated in an infected place, or being infected, should be vacated, and their inhabitants should be removed from the infected spot.

IX. It is especially recommended that the ground-water (that is the water in the ground) about dwelling-houses, and all the grounds about habitations of every kind, should be preserved undefiled by any excremental matter of cholera; also, that all drinking water be undefiled and pure, and that where no pure water can be had that the water which must be used should be disinfected by boiling.

Such were the final conclusions of the Conference in reference to the first duties of sanitary authorities, and the people of any town that is threatened by cholera. The discussions were based upon the experience and studies of the distinguished gentlemen who had thus agreed to meet and compare their views, and the results of their observations. The attendants at the conference were from various cities of Germany, Holland, Prussia, Austria, Hungary, and Russia. The history of cholera outbreaks among the troops in the war last year proved marvellously interesting, and conclusive on many points. Next in order of interest and importance was the history of infection by means of water contaminated by cholera excrement. Closely allied to the latter subject was the examination of evidence concerning the discoveries that have been made in regard to the particular means by which the cholera infection is transported and propagated. Lastly and most practically useful was the examination of evidences concerning the proper and best methods of disinfection, and the relations of such means to the control and promotion of cholera epidemics. The chief medical officer to the Privy Council of Great Britain presented the history of the outbreaks of cholera in London in connection with the water of the East London Water Company, which, as Dr. Radcliffe has shown, was contaminated by cholera excrement. In the district where that water was used the epidemic burst forth as by explosion; while, subsequently, in other places it spread by the more usual methods and in the more usual manner. Then again, there were

other instances where the epidemic spared all persons in certain asylums and hospitals who used privies that were entirely uncontaminated by cholera excrement, while the epidemic decimated the classes of inmates that used the latter. The Conference conceded that wells and reservoirs of drinking water were frequently contaminated by the cholera poison by soakage into them of the infectious element from the cholera stools; but Profs. Pettenkofer, Wanderlich, Simon, and others, agreed that drinking water was not the most universally common means of communicating cholera to man. The influence of ground-moisture, or more precisely of the ordinary ground-water, while such water or moisture is receding by drying of the ground after a wet period, was proved by such who daily used the same well water, but who used different privies and frequented different and well separated yards, as we saw the same fact illustrated in two adjacent pavilions on Blackwell's Island, last summer. The influence of different kinds of ground in receiving and propagating the epidemic virus of cholera was examined, and Dr. Pfeiffer, of Vienna, showed the curious course which the epidemic pursued in passing through the great forest country of Thuringen last year; while the delegates from Dresden and some other places showed what conditions of the earth had permitted and favored the spread of cholera on their soil, that covered certain granite rock districts. The outbreaks on Blackwell's Island and the rocky summit of Hudson City, fully bear out the conclusions of the Conference on the subject of cholera epidemics on rocky surfaces, and do not disprove the agency of the surface soil in propagating the virus when planted in such places. Examining the great mass of facts presented by members of the Conference in regard to influence of the ground and its retentiveness of undrained water or of being porous, and, at times saturated and again undergoing a course of drying by evaporation, the more important conclusions seem to be as follows:

1. That porous soils, and any kind of earth that retains and favors the ordinary kinds of fermenting filth, will readily retain and repropagate the virus of cholera when once the germinal virus has been introduced or planted by persons coming from infected places. That the mere altitude of a place is not the question that determines its susceptibility to cholera; that the moisture (ground-water) and the fluctuations of that moisture of a soil by rising and receding (drying), favor the propagation of cholera; that a sewer or drain may become the chief source of infection to some places where there is no soil, or where the ground and everything except the sewers and drains have been disinfected.

2. That Prof. Pettenkofer's use of the term ground-water should be understood, as he intended, to mean the standard of saturation by moisture in the soil, and that grounds which, upon their surface appear to be high and dry may, nevertheless, be saturated with moisture; that is, have an excess of ground-water (or high ground-water), and that the Sanitary drainage and drying which are necessary to protect a soil against repropagating the planted virus or germs of cholera must be deep and thorough. The history and topography of the cholera fields of Halle, Berlin, Zwickon, Thuringen, Helsingfors, and St. Petersburg supplied admirable proofs of this great doctrine in sanitary drainage.

3. Good proofs were adduced that there are some kinds of soil that seem to be natural disinfectants of cholera virus, and upon which an epidemic cannot spread except in filthy houses, sewers, etc. We have not time to make the abstract of the facts that will illustrate the true theory of this kind of exemption. We can say, however, that it is plainly important that regard should be given to the kinds of earth and materials used for filling up sunken lots, and that even the location of dwelling-places may sometimes be wisely a matter of choice as regards the nature of the soil.

The facts concerning specific disinfection to destroy both the cholera virus and all susceptibility to material for its repropagation in a house or a district were well discussed in the Conference. The negative facts were specially important, for they showed that in a few places, as in the great prison at Halle, the epidemic swept forward regardless of the previous and continued disinfection of the grounds and nuisances with sulphate of iron. But in those instances it was proved that the sewers and drains were not disinfected, and that not only were the infected spots particularly exposed to and connected with such drains and sewers, but that the copperas solution had been relied upon without admixture with carbolic acid, and the powerful antiseptic agents which coal-tar contains. In Berlin there was great success in the use of permanganate of soda, with sulphuric acid added—that is, the success was achieved by the most rapid and powerful oxidization, in the same manner as we last summer disinfected the defiled clothing and bedding of the cholera sick by means of permanganate of potassa. The expensiveness of the method is the chief objection to it. Yet, for domestic and limited applications, it is a perfect method for clothing and upholstery. The fact that with entire unanimity the Conference recommended that the main reliance for disinfection should be

placed in the simpler and powerful agents—sulphate of iron and carbolic acid, which the Metropolitan Board unhesitatingly adopted at the beginning of the epidemic last year—will be amply warrant for out continuing to employ those cheap and effectual substances.

The vital importance of perfect sanitary care of all persons sick or infected with cholera, was illustrated in the history of the epidemic in every city. Disinfection alone, especially the irregular and unsystematic or unenforced applications of disinfection, did not always control the prevalence of cholera; indeed, such exclusive and unmethodical sanitary work often resulted in fatal disappointments. In some cities, as in Erfurth, even the carbolic acid was so freely used in some parts of the town (in privies), that the wells in the vicinity of privies flooded with that disinfectant, yielded water that tasted strongly of it; yet parts of Erfurth were neglected, and cholera was fearfully epidemic there. But it was conceded that in cities in which there was perfect, and systematic and well-regulated sanitary disinfection, combined with perfect care of the sick and of all suspected persons, as was the case in the city of Bristol and some other favorite cholera haunts, the epidemic was controlled, and, by like faithfulness and skill, that it could and should be generally controlled in all civilized cities.

Professor Hirsch presented the arguments and studies that favor the discovery of the precise nature of the poison that produces cholera, and the Conference commended and urged on the inquiries that have already, in the hands of Professors Klob and Thome, last year, resulted in discovering a minute microscopical growth that seems, thus far, to be exclusively produced in cholera excrements, and which obey all the tests for the destruction as well as the propagations of the cholera. The spores of that little growth multiply with marvellous rapidity, and they are not destroyed by ordinary doses of chlorine or chloride of lime, but are killed by sulphate of iron and carbolic acid.

The Conference recommend that scientific naturalists, like the men who are now at work on these questions, should continue their researches. It was also recommended that observers of cholera should carefully study the conditions under which the epidemic is transported from place to place, and also study the relations of grounds, moisture (ground-water), and other local conditions that determine the boundaries of epidemic fields.

It will be observed by these notes, of a discussion that appears to have been conducted with the single object to find out what is known, that there was a clear knowledge of the prac-

tical wants of sanitary officers and governments. The nine propositions which the members of Conference have submitted as their unanimous conclusions and recommendations, I have placed at the beginning of this abstract, as being precisely the kind of information which a Board of Health most wishes to receive, and upon which it can base judicious practices. Fortunately for the good name of your Board as for the safety of the city last year, our practice was, from the first, based upon these doctrines, and the great minds that led in the Weimar Conference were the men that had most aided us in former years to deal with epidemic and infectious diseases. I am happy to learn that the Leipzig report is to be fully illustrated by maps and charts to show precisely what course cholera has pursued in European cities. We may hope to receive copies next month. I regret that the Abstract forwarded by Professor Pettenkofer cannot be entirely translated and placed in your hands to-day. These pages contain the gist of the whole, but the debates touched upon a great many other points. We are a little surprised that some conclusion and recommendation on quarantine was not reached. But, since the fact has been demonstrated that persons who travel away from an infected district may themselves, while yet journeying and not sick, spread cholera, by means of excremental evacuations, it is not surprising that little reliance should be placed upon quarantine regulations as a means of preventing cholera from spreading in Europe.—*Phila. Medical & Surgical Reporter.*

Book Notices.

We have space, in the present number, only sufficient to acknowledge the reception of the following important works:

The Practice of Medicine and Surgery Applied to the Diseases and Accidents Incident to Women. By WM. H. BYFORD, A.M., M.D., Author of "A Treatise on the Chronic Inflammation and Displacements of the Unimpregnated Uterus," and Professor of Obstetrics and Diseases of Women and Children in the Chicago Medical College. Second edition, enlarged. Pp. 616. Philadelphia: LINDSAY & BLAKISTON. 1867. Price, \$5.00.

Studies in Pathology and Therapeutics. By SAMUEL HENRY DICKSON, M.D., LL.D., Professor of Practice of Physic in Jefferson Medical College, etc., etc. New York: WM. WOOD & Co. Publishers, 61 Walker Street. 1867. Duodecimo. Pp. 201. For sale by W. B. KEEN & Co., 148 Lake Street.

Headaches: Their Causes and their Cure. By HENRY G. WRIGHT, M.D., M.R.C.S.L., L.S.A., Member of Royal College of Physicians of England, etc., etc. From the Fourth London Edition. Duodecimo. Pp. 154. Philadelphia: LINDSAY & BLAKISTON. 1867. Price, \$1.25.

Inhalation: Its Therapeutics and Practice. A Treatise on the Inhalation of Gases, Vapors, Nebulized Fluids, and Powders, including a description of the Apparatus employed, and a record of numerous experiments, Physiological and Pathological, with cases. By J. SOLIS COHEN, M.D. Illustrated. Philadelphia: LINDSAY & BLAKISTON. 1867. Price, \$2.50. For sale by S. C. GRIGGS & Co., 39 and 41 Lake Street.

Notes on the Origin, Nature, Prevention, and Treatment of Asiatic Cholera. By JOHN C. PETERS, M.D. Second Edition, with Appendix. New York: D. VAN NOSTRAND, 192 Broadway. 1867. Duodecimo, pp. 200.

Epidemic Meningitis, or Cerebro-Spinal Meningitis. By ALFRED STILLE, M.D., Prof. of Theory and Practice of Medicine, and of Clinical Medicine, in the University of Pennsylvania, etc., etc. Philadelphia: LINDSAY & BLAKISTON. 1867. For sale by COBB, PRITCHARD, & Co., 81 Lake St. Price, \$2.00.

Hufeland's Art of Prolonging Life. Edited by ERASMUS WILSON, F.R.S., Author of A System of Human Anatomy, etc., etc. Philadelphia: LINDSAY & BLAKISTON. 1867. Pp. 298. Duodecimo. Price, \$1.25. For sale by COBB, PRITCHARD, & Co., 81 Lake Street.

Biennial Retrospect of Medicine, Surgery, and Allied Sciences. Edited by Mr. H. POWER, Dr. ANSTIE, Mr. HOLMES, Mr. THOMAS WINDSOR, Dr. BARNES, and Dr. C. HILTON FAGGE, for the New Sydenham Society. Philadelphia: LINDSAY &

BLAKISTON. 1867. For sale by S. C. GRIGGS & Co., 39 and 41 Lake Street. Price, \$3.50.

Lectures on Diseases of Women. By CHARLES WEST, M.D., Fellow of the Royal College of Physicians, etc., etc., etc. Third American from the Third and Revised English Edition. Philadelphia: HENRY C. LEA. 1867. For sale by W. B. KEEN & Co. Price, \$3.25.

Editorial.

CLOSE OF THE VOLUME.—The present number closes the Eighth Volume of the EXAMINER. Severe sickness in our little family circle, prevents us from giving our intended clinical report and some editorial articles. We can, at present, only thank our patrons for their past favors, and express the hope that they may be continued.

TRANSACTIONS OF THE ILLINOIS STATE MEDICAL SOCIETY.—The Transactions of our State Medical Society for 1867, are now ready for distribution to the members. The publication has been delayed, at least two months, by the late reception of the report on Plastic Surgery.

PROFESSIONAL APPOINTMENTS.—The following changes have been made in the Faculty of the Long Island College Hospital: Dr. C. L. FORD has accepted the Chair of Anatomy, and Dr. FOSTER SWIFT, that of Obstetrics and Diseases of Women and Children. Dr. SAM'L G. ARMOR has been transferred to the Chair of Principles and Practice of Medicine. Dr. AUSTIN FLINT retaining the Chair of Clinical Medicine.

NOTICE.—*Prof. Davis*:—I am pained to announce the death of JAS. F. SPAIN, M.D., in Urbana, Ohio, on the morning of October 13th last. Dr. SPAIN was a man of superior mental and social qualities, and was known only to be loved. Dr. SPAIN graduated in Rush Medical College, in the spring of

1860, with honor to the school and himself. He died from an attack of apoplexy of the brain.

D. B. WREN, M.D.

REPORT ON THE SANITARY CONDITION AND
PREVALENCE OF DISEASE IN CHICAGO DURING
THE MONTHS OF JULY, AUGUST, AND SEPTEMBER,
1867.

By N. S. DAVIS, M.D., Member of the Sanitary Committee.

Read to the Chicago Medical Society.

In my previous report to this Society, ending June 30th, it was stated that the meteorological and sanitary conditions during the preceding three months, had been such as to favor a good condition of public health, and a low ratio of mortality.* The last week in June was represented as hot, oppressive, with south winds during each morning, but cool and bracing with west and north-west winds in the evenings.

The first day of July was clear, cool, and bracing, with a prevalence of north-west winds. The 2d, was ushered in with a hot, oppressive atmosphere, and south wind, which was continued until 4 o'clock P.M., when it suddenly changed to the north-east, became boisterous, with clouds and thunder, but no rain. The 3d, was warm and cloudy, with slight rain in the morning, followed by west wind and copious showers of rain at evening. The morning of the 4th was hot, damp, and oppressive, with south wind. Early in the afternoon the wind changed to the north, the atmosphere became cooler, and the night was cool and clear. The 5th and 6th were moderately warm, sultry, with south and south-west wind, and a drizzling rain nearly all of both days. The 7th, was clear, dry, and cool, with northerly winds all day. The 8th, atmosphere clear, warm, and oppressive, with south wind during the morning. In the afternoon, rain fell, during which the wind changed to the north, bringing a cold, clear atmosphere in the evening; and which was con-

* See MED. EXAMINER, for August, 1867.

tinued through the 9th. The morning of the 10th was ushered in with a strong south wind, hot and oppressive, with showers of rain at midnight. The 11th, was cloudy, damp, moderately warm, with wind, first south-west and then west. The 12th and 13th, mostly clear, dry, and cool, with light winds from the west and north. The 14th, was clear, hot, and oppressive, with south wind all day; but during the night, the wind changed to the north-west, bringing a cold, drizzling rain, which lasted until noon of the 15th, when the atmosphere became cool, clear, and dry, and continued so until the morning of the 17th. From the 17th to the 22d, the atmosphere was mostly clear, moderately hot, with cool nights, and very little wind from any quarter. There were clouds and slight rain on the 19th. The night of the 22d, like the day, was hot, clear, oppressive, with only slight wind from the south. These atmospheric conditions continued until the evening of the 24th, when there was slight rain, followed by thunder and slight rain on the morning of the 25th, with a continuance of high heat and dampness of atmosphere. In the evening, the wind changed to the north-west, bringing first light showers, and afterwards a cool, clear atmosphere, which continued until afternoon of the 26th, when the wind changed to the south, and the heat and dampness again became very oppressive, and continued so until the morning of the 28th. From this date until the evening of the 30th, a strong west and north-west wind prevailed, with a cool, dry, and bracing atmosphere. During the night of the 30th, the wind changed to the south, bringing a copious warm shower at 4 o'clock A.M. of the 31st. The heat and dampness continued until 3 o'clock P.M., when the wind suddenly changed to the north-west, accompanied by an active thunder shower, and followed by a temperature so low as to be very chilly.

It is thus seen, that the prominent meteorological characteristics of July were, frequent changes in temperature, in atmospheric currents, and frequent light falls of rain, with a mean average temperature for the month about ordinary, it being several degrees lower than the mean temperature of July 1866; and slightly above that of the same month in 1865.

In regard to local sanitary conditions, it may be said, that much greater efforts had been made to keep the streets and alleys free from garbage and decomposable materials, and to prevent the out-door privies from becoming full, than in previous years. Yet these efforts on the part of the Board of Health were only partially successful, there being during all the month, in some populous portions of the city, unopened ditches, full privies, and other materials capable of decomposition under a July temperature. The gross mortality for the month was 538, being 168 less than for the same month in 1866, and 113 more than in July 1865. The increase over 1865, is mostly owing to the increase of population, while the excess in 1866 was the direct result of a prevailing epidemic influence, of a choleraic character. This is shown by the following comparison:

Whole number of deaths from bowel-affections in			
	1865	1866	1867
July,-----	163	299	236

More than 80 per cent of this large mortality from bowel-affections in July of each year, occurred in children under three years of age. The connection of this excessive infantile mortality with the first high temperature of every summer, is shown by comparing the mortality in July in each year with that of June. Thus:

The mortality from bowel-affections in			
	1865	1866	1867
June,-----	20	45	21
July,-----	163	299	236

A more detailed observation of facts, further shows that a large proportion of the attacks in children commence on particular days, when the temperature of both day and night is high, with an excess of atmospheric moisture. Thus, of 73 attacks of cholera-infantum, diarrhœa, etc., coming under my own observation, during July, 1867, 56 were found to have commenced on the following days, namely, 18 on the 3d and 4th; 10 on the 10th and 11th; 11 on the 13th and 14th; 7 on the 19th; and 10 on the 22d and 23d. By referring to the meteorological facts already given, it will be found that these are the

days preëminently characterized by high temperature, oppressive south winds, and excessive moisture.

The first case of well-marked, spasmodic cholera that came under my observation during the month, was a little girl, in the rear of 351 Illinois Street, who was attacked during the hot, sultry morning of the 4th, passed rapidly into collapse without medical treatment, and died on the morning of the 6th. The next was a man, in the rear of 124 South Jefferson Street, who was attacked with serous diarrhœa on the 11th, which culminated in the full choleraic symptoms during the night of the 13th. Two cases occurred on the 20th: one was a woman in the rear of 331 Fourth Avenue; the other was a child, 2 years of age, in the rear of 24 West Harrison Street. Both these patients passed rapidly into collapse and died. The fifth case commenced on the 22d, in an intemperate man, living at 119 South Market Street. On the 23d, two cases occurred: one, a middle-aged woman, at 197 Van Buren Street; the other, also a female, about 30 years of age, residing at 70 West Indiana Street. Both these were violent cases, and had passed into collapse before I saw them. They died on the morning of the 25th. Another well-marked case occurred, in a woman in advanced life, at 202 Sebor Street, on the night of the 24th. She was placed under treatment early, and recovered. During the same day, a man, at 342 West Kinzie Street, was attacked with cholera diarrhœa, which ended in the development of full cholera symptoms, on the 25th; but he recovered. At 3 o'clock A.M. of the 31st, a man was attacked with active cholera symptoms, at 54 Fourth Avenue, but he recovered. The cases here alluded to as cholera, were as well characterized in their symptoms as any cases that occurred during the summer and autumn of 1866, and they were, consequently, reported to the Board of Health.

During the last week of the month, I saw many cases of dysentery, in which the evacuations were bloody serum instead of mucus, accompanied by cool extremities, small pulse, and rapid prostration, constituting what has been called cholera dysentery.

In making inquiries and noting carefully, from day to day,

the exact commencement of cases of cholera-infantum, cholera-morbus, and spasmodic cholera, not only during the month now under consideration, but during the summer months of every year since 1849, I have fully satisfied myself that fifteen out of every twenty cases of these diseases have their first symptoms developed during days and nights when the atmosphere is hot, damp, and deficient in free electricity; or during the night time, in persons while sleeping in small, close, unventilated bedrooms. It is well known to every observing practitioner, who has seen much of cholera-infantum and epidemic cholera, that a large proportion of the attacks commence between midnight and 6 o'clock A.M. And I have gathered sufficient data to show that the impure air of small or overcrowded and unventilated sleeping rooms, is one of the most potent exciting causes determining such results.

August.—From the 1st of August to 11 o'clock A.M. of the 4th, the atmosphere was cool, dry, and nearly free from clouds, with a predominance of west and north-west winds. At 11 o'clock of the 4th, the atmosphere became still, or moved only by a slight breeze from the south, and hot and oppressive. It continued in the same condition until the afternoon of the 9th, when, suddenly, a brisk, cool wind came from the north, with flying clouds and slight rain. The 10th and 11th were cool and dry, with north winds. With the morning of the 12th came south wind and a hot, dry atmosphere, followed by copious showers and sharp lightning in the evening. From the 13th to the 16th, the air was cool, dry, and pleasant, except about four hours of hot, oppressive atmosphere on the afternoon of the 14th. The 17th and 18th, were continuously hot and oppressive, with very slight wind from the south. The morning of the 19th was ushered in by a copious warm shower, speedily followed by a cool east, and, later, north-east wind, with a cool, rainy afternoon. From the 20th to the 25th, inclusive, the atmosphere was cool and bracing, except two or three hours in the middle of each day, which were hot and oppressive. The wind veered each day from south-east in the morning, to north-west and north in the evening. Moderate

showers fell in the evenings of the 21st and 22d, accompanied by fine displays of atmospheric electricity. With the morning of the 26th, came a warm shower, with south wind; hot and oppressive during the middle of the day, followed by copious showers and sharp lightning in the evening. From the 27th to the 30th, inclusive, the atmosphere was cool, dry, and pleasant, with chilly nights. The 31st was cold and rainy, with south-west wind.

It is thus seen that the prominent meteorological characteristics of August were, a predominance of northerly winds, cool, bracing air, and a full average of atmospheric electricity. There were only eleven hot, oppressive days during the month, and only four of these were consecutive or continuous, one with another. Rain fell on seven different days, accompanied by thunder and lightning on four.

During the first six days of the month, I met with no cases of either cholera-morbus or cholera-infantum, except such as had dated their commencement in July. But the continuous high temperature from the 4th to the 8th was accompanied by quite a number of new attacks on the 7th and 8th. During the warm days and cool nights from the 9th to the 16th, attacks of typhoid fever and dysentery became very frequent, especially among the laboring classes. Some new cases of cholera-infantum and diarrhæa occurred from the 17th to the 19th, and many old cases that had partially recovered were renewed. From this time to the end of the month, most of the new attacks of bowel-affections, both in children and adults, presented the form of dysentery; while typhoid fever continued to be of frequent occurrence.

The only cases of cholera that came under my observation during the month, were the following:—A servant girl was attacked violently, during the hot, sultry night of the 4th, while sleeping in an overcrowded, unventilated room, in the alley in the rear of the Opera House. She was placed under treatment early and recovered. A young man at 44 North Peoria Street, who had just returned from the country, was attacked during the latter part of the night of the 17th. He

was placed under treatment almost immediately and recovered. The same morning (18th) I was called to an Irish laborer, at No. 48 Ohio Street, whom I found in a state of complete collapse, and he died during the same day. He had some diarrhœa since the evening of the 14th, and all the symptoms of violent epidemic cholera supervened on the morning of the 17th. On the morning of the 19th, saw another Irish laborer in the same neighborhood, 77 Ontario Street, who commenced having diarrhœa at noon on the 18th, which developed into full and severe cholera during the latter part of the following night. Although passing to the very verge of collapse, he recovered. The local sanitary conditions in the neighborhood where these two cases occurred were bad. The drainage was very imperfect, several of the out-door privies were full to the surface, and a cow was stabled under the house No. 48 Ohio Street. On the 29th, I was called to see a man, at 645 State Street, who had been attacked with diarrhœa at Racine, about ten days previous. He was brought to the city on the 27th, when his symptoms assumed the character of severe spasmodic cholera. On the 29th, I found him with entire suppression of urine, pulseless, cold, very blue and corrugated on the surface, and all the phenomena of complete collapse. He died soon afterwards. It will be observed that all the foregoing cases, except the one brought from Racine, occurred on days or nights when the atmosphere was hot and oppressive, with south winds.

The gross mortality for the month of August was 697, of which 340 were from bowel-affections, namely, cholera-infantum, 212; cholera-morbus, 7; cholera, 2; diarrhœa, 85; dysentery, 36. From personal observation, I am certain that a large majority of the fatal cases of cholera-infantum were such as had their origin in July and had lingered in a chronic form until some time in August. And, on a strict diagnosis, a large proportion of them should have been classed as dysentery. Compared with the same month for 1865 and 1866, the result is as follows:

1865.			1866.			1867.		
Gross Mort.	Bow.-Aff.	Gr. Mort.	Bow.-Aff.	Cholera.	Gr. Mort.	Bow.-Aff.	Cholera.	Gr. Mort.
464	208	940	376	139	697	340		

We thus see, that while July and August of 1867 give a mortality much below the same months of 1866, it is so much above that of 1865 as to indicate a higher ratio in proportion to the population.

We have occupied so much time and space with the meteorological and other details concerning the months of July and August, that we will make only a brief allusion to September. It was characterized by no striking meteorological characteristics. The atmosphere was, a great part of the time, dry, warm in the middle of the day and cool during the night. The rainy days were few, and the amount of rain-fall below the average for this month in this locality. Bowel-affections in young children rapidly diminished, while dysentery and continued fevers increased among adults. This is shown by the following comparison:

	Cholera-Infantum.	Dysentery.	Typhoid.	Typhus.
July,-----	177	10	9	2
August,-----	212	37	13	5
September,-----	82	29	18	4

The total mortality for September was 507; being 232 less than in the same month of 1866, and 161 more than in September 1865. I saw, during the month, only three well-marked cases of spasmodic cholera, one of which passed into fatal collapse in a few hours. The effect of local causes on the general mortality is strikingly illustrated, by comparing different sections of the city. For instance, the total population of the 1st, 2d, 3d, 9th, and 10th Wards in 1866, was 63,747. The total deaths in the same Wards in August and September, 1867, was 190, or 1 to 335 of the population. The total population of 5th, 6th, 7th, 8th, 13th, and 14th Wards, was 69,670. The total deaths in the same Wards during August and September, 1867, was 555, or one to 125 of the population. The first series of Wards embraces the best drained and most substantially built portion of the city, inhabited chiefly by the mercantile, professional, and business classes of the city; while the second series is the reverse, both in sewerage and building, and is inhabited chiefly by laboring classes of Irish and German nativity.

The facts briefly, and perhaps imperfectly, set forth in this report, clearly establish two conclusions, of great etiological as well as sanitary importance:—The first is, that certain atmospheric or meteorological conditions are essential to the production of some of the most important endemic as well as epidemic forms of disease. The second is, that certain local sanitary conditions, relative to sewerage, house ventilation, privy accommodations, cleanliness, and personal habits, are capable of increasing, in a three-fold degree, the injurious and fatal effects of the meteorological conditions alluded to.

We cordially commend the following enterprise to the patronage of our subscribers and readers.—[Ed.]

THE HALF-YEARLY COMPENDIUM OF MEDICAL SCIENCE: Being A Synopsis of Practical Medicine, Surgery, and Medical Literature.

The first part of this work will be issued from the office of the *Medical and Surgical Reporter* on the first of January, 1868. It will comprise about 300 pages royal octavo size, and will contain a well-prepared synopsis of the articles in the medical periodicals and monographs, and a general review of the medical literature of the preceding six months, both of this country and Europe.

In the preparation of this work, we will be aided by many well-known writers, among whom are Drs. L. Elsburg, Samuel R. Percy, R. E. Van Gieson, F. D. Weisse, C. F. J. Lehlbach, S. W. Gross, George H. Napheys, J. E. Garretson, W. M. Turner, A. Paul Turner, and others.

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D. G. BRINTON, M.D. }

115 South Seventh St., Philadelphia.

We earnestly hope that this NATIONAL UNDERTAKING will be heartily supported by the profession. All who are willing to subscribe are requested to fill the following blank, and return to this office, *before the 10th of December*, as the size of the edition of the first number will be governed by the encouragement we receive.

MONEY RECEIPTS TILL NOVEMBER 25th, 1867.—Drs. J. Good, Warren, Ind., \$3; R. M. Buchner, Aroma, Ill., 3; T. A. Bunnell, Chicago, 3.75; O. T. Maxon, Chicago, 6; John McHugh, Urbana, Ill., 2; Geo. W. Keener, Venice, Ill., 3; John Bell, Benton Harbor, Mich., 3; R. S. Lewis, Dubuque, Iowa, 3; B. Ragon, Roseville, Ill., 3; C. M. Spalding, Byron, Ill., 3; T. H. Bras, New Boston, Ill., 7; W. Stewart, Otumna, Iowa, 9.

MORTALITY REPORT FOR THE MONTH OF OCTOBER:—

The monthly report is as follows:—

CAUSES OF DEATH.

Accidents,-----	13	Fever, Scarlet,-----	3
Angina Membranacea,-----	2	Fever, Typhoid,-----	25
Anæmia,-----	1	Fever, Typhus,-----	2
Apoplexy,-----	2	Gastritis,-----	1
Asthma,-----	1	Hæmatemesis,-----	1
Aseitics,-----	1	Hepatitis,-----	1
Atrophy,-----	2	Heart Disease,-----	4
Birth, premature,-----	9	Hydrocephalus,-----	4
" still,-----	26	Inanition,-----	6
" tedious,-----	1	Jaundice,-----	2
Brain Congestion of,-----	5	Laryngitis,-----	1
" Dropsy,-----	1	Liver, abscess of,-----	1
" Inflammation of,-----	8	Lungs, congestion of,-----	1
" Softening of,-----	2	Measles,-----	4
Bright's Disease,-----	1	Meningitis,-----	5
Bronchitis,-----	2	Meningitis, Cerebro Spinal,-----	3
Bowels, inflammation of,-----	5	Meningitis, Tubercular,-----	2
Bowels, obstruction of,-----	1	Mortification,-----	1
Croup,-----	11	Nephritis,-----	1
Cerebritis,-----	1	Old Age,-----	4
Chills, congestive,-----	1	Ophthalmia purulent,-----	1
Convulsions,-----	42	Paralysis,-----	2
Cholera-Morbus,-----	2	Consumption,-----	25
Cholera Infantine,-----	41	Peritonitis,-----	4
Cynosis,-----	1	Pneumonia,-----	11
Debility,-----	7	Poison,-----	1
Delirium Tremens,-----	1	Phlebitis,-----	1
Diarrhoea,-----	11	Scrofula,-----	2
Diphtheria,-----	10	Small-Pox,-----	20
Dropsy,-----	1	Suicide,-----	1
Dysentery,-----	13	Stomach, cancer of,-----	4
Enteritis,-----	8	Tabes Mesenterica,-----	13
Epilepsy,-----	2	Teething,-----	14
Eucephalis,-----	1	Whooping-Cough,-----	2
Fever, Bilious,-----	1	Ulcers, malignant,-----	1
Fever, Malignant,-----	1	Ulcers, cancer of,-----	3
Fever, Termittent,-----	1		
Fever, Puerperal,-----	5	Total,-----	428

COMPARISON.

Deaths in October, 1867,-----	428
Deaths in October, 1866,-----	1,170
Decrease,-----	742
Deaths in September, 1867,-----	507
Decrease,-----	79

AGES OF THE DECEASED. — Under 5 years, 326; over 5 and under 10 years, 17; over 10 and under 20, 19; over 20 and under 30, 34; over 30 and under 40, 31; over 40 and under 50, 22; over 50 and under 60, 17; over 60 and under 70, 7; over 70 and under 80, 3; over 80 and under 90, 5; still born and premature, 27; tedious births, 1; unknown, 9. Total, 428.

SEXES.

Males,-----230 | Females,-----198 | Total,-----428

COLOR.

Colored,-----8 | White,-----420 | Total,-----428

NATIVITIES.

Chicago,-----224	England,-----6	Scotland,-----2
Other parts U. S.,---65	France,-----1	Sweden,-----3
Austria,-----1	Germany,-----42	Switzerland,-----2
Belgium,-----1	Holland,-----7	Wales,-----2
Bohemia,-----4	Ireland,-----40	Unknown,-----1
Canada,-----8	Norway,-----7	
Denmark,-----1	Prussia,-----6	Total,-----428

CHESTNUT LEAVES IN PERTUSSIS.—In the *Cincinnati Lancet and Observer*, Dr. J. S. Unzicker, of Cincinnati, reports the use of a decoction of leaves of the chestnut, *Castanea Visca*, in hooping-cough. He says:

I have given it a fair trial in about thirty cases, and feel satisfied in saying that at last a remedy is found to cope with this disease. In all of these cases it gave decided relief the first two weeks. The cough is cut short, and patients rest easier through nights, and the decline of all symptoms from that time on is very rapid. My method of using it is as follows: take from $\mathfrak{z}\text{ij}$. to $\mathfrak{z}\text{iv}$. of the leaves to the pint of water; let it come to a boil, then pour the whole into a teapot, without straining, and let them drink occasionally—either cold or warm—and as much as they will through the day and at bedtime. Children, I find, like to drink it, even without sugar, which I consider best, and have that way administered it to infants, without the least difficulty.

WINTER RETREAT FOR CONSUMPTIVES.

A large house is being fitted up under the superintendence of DR. PRINCE, in Jacksonville, heated by furnaces, so arranged as to admit of the purification and medication of the air of the house, producing an artificial climate, not only favorable for the most speedy recovery of patients undergoing surgical treatment, but also adapted to secure the best atmosphere for those affected or threatened with pulmonary complaints.

It is expected that the repairs and alterations necessary for this purpose will be completed by the first of December.

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